

Work Order ID 144132

144132

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April 05, 2016 8:28:39 AM

Item ID: D4037-3 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Fwd Crossbeam
 Start Date: 4/20/2016 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 4/29/2016 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: SW Date: 20160405 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4037	D

100 0.00
100
 Waterjet
 FLOW CNC Waterjet
 Memo
 Cut blank as per file D4037-3_BLANK

4 16-4-15
 DAS
 50
 9-89

110 0.00
110
 HAAS 1
 HAAS CNC vertical machine #1
 Memo
 MACHINE AS PER FOLI FA878 AND DWG
 FOLIO REV: D
 DWG REV: D
 DEBURR

4
 DAS
 44
 9-89 16-04-25
 16/04/26

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : ☐			
Misidentified ☐		Past Due ☐					

DQA: _____ Date: _____



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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 *150* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum <i>M 134371.</i> Memo	0.00 0.00	START: 2:00. OV. T: 320°. FINISH: 2:30.			<i>N</i>	<i>Ø</i>	<i>16-05-2.</i>	<i>238</i>
160 *160* QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00				<i>(4)</i>		<i>DAS</i> <i>38</i> <i>8-89</i>	<i>MAY 03 2016</i>
170 *170* Packaging Packaging	Identify as per dwg & Stock Location: <i>5471</i> Memo	0.00 0.00				<i>4</i>		<i>MAY 04 2016</i> <i>DAS</i> <i>8</i> <i>8-89</i>	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Work Order ID 144132

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Item Name: Fwd Crossbeam
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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC21- Final Inspection - Work Order Release	0.00							
180									
QC	Memo	0.00							
Quality Control									

MLJ MAY 04 2016

MLJ MAY 04 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		☐ OTHER : _____			

Picklist Print

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Work Order ID: 144132

144132

Parent Item: D4037-3

D4037-3

Parent Item Name: Fwd Crossbeam

Start Date: 4/20/2016

Required Date: 4/29/2016

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A NEW ISSUE 09-12-14 JLM VERIFIED BY:EC IPP
REV:B AS PER REV B 10-04-19 JLM VERIFIED BY:EC IPP REV:D AS
PER ECN 11-554 11-05-24 JLM VERIFIED BY:DD IPP REV C:AS PER
ECN 10-563 10-09-28 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B1.000X15.00 0		Purchased		No		100	f	29.5200	3.9	16.42105			

M6061T6B1 000X15 000

6061-T6 Bar 1.00 x 15.00

0016 000

**

16-4-15 *[Signature]*

Location	Loc Qty	Loc Code
MAT	9.92	
m132360	4	
m132773	5.92	
MAT007	19.6	
m132894	19.6	

16.5

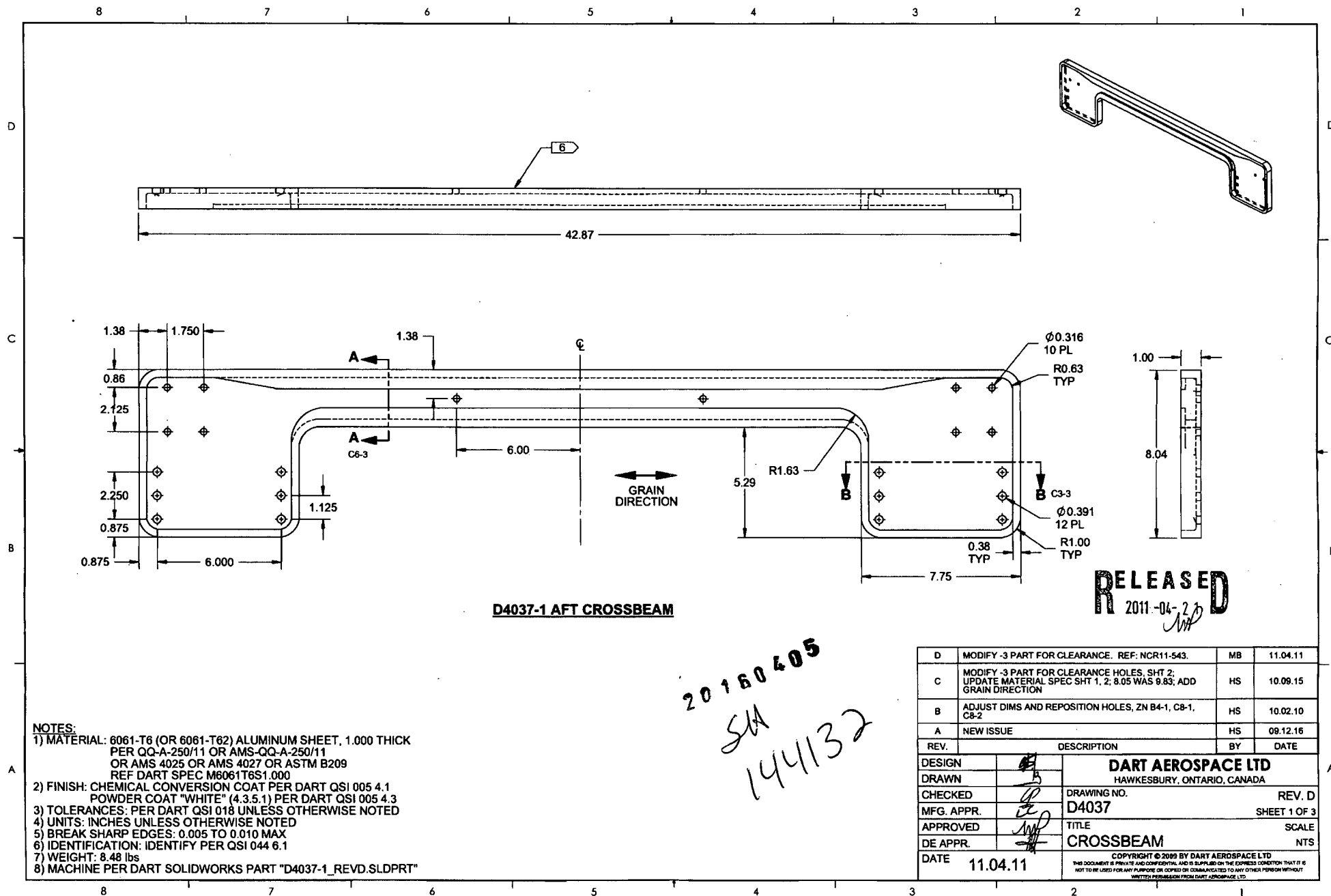
DART AEROSPACE LTD		Work Order:	144132
Description: Fwd Crossbeam		Part Number:	D4037-3
Inspection Dwg: D4037 Rev: D		Page 1 of 1	

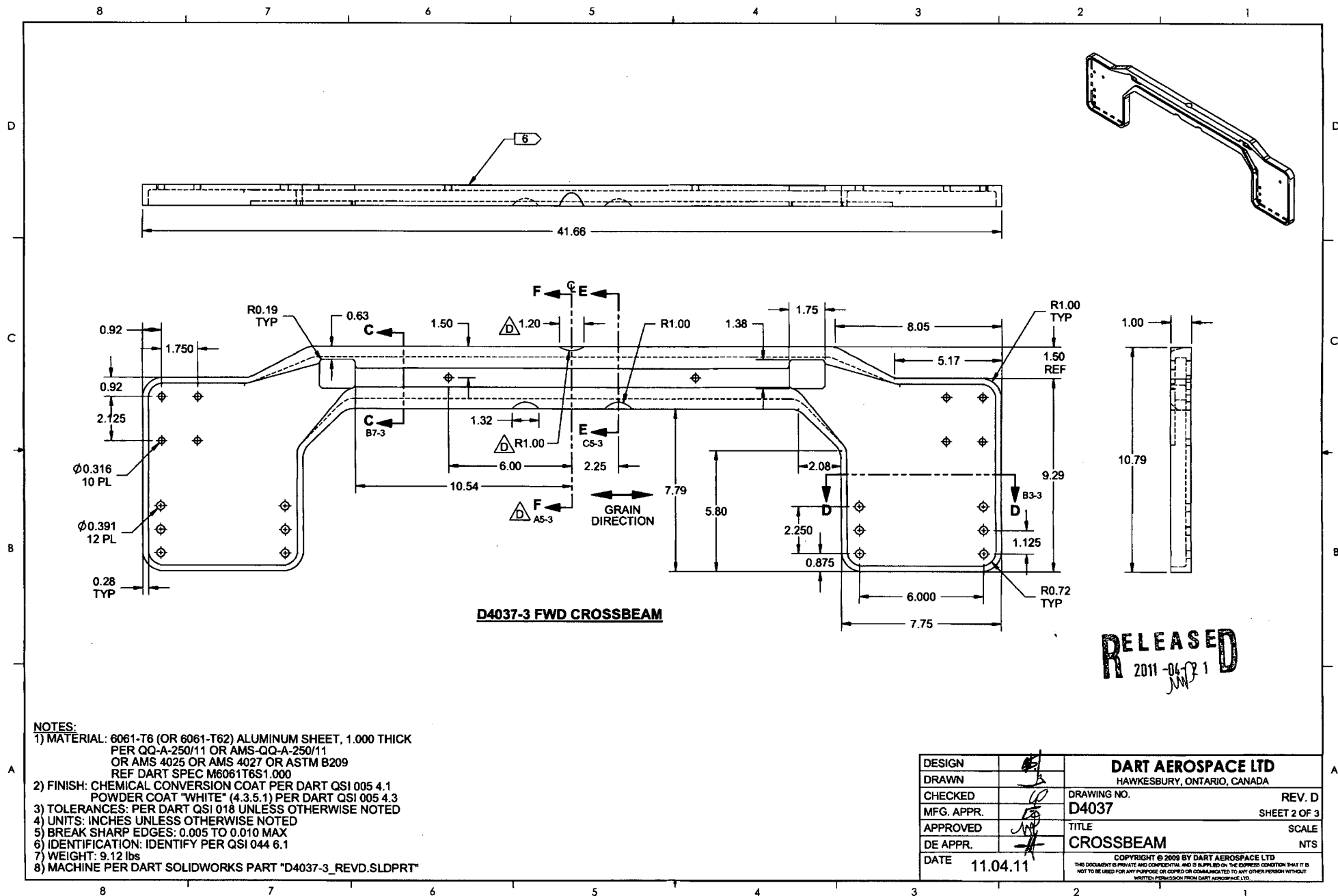
FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
41.66	+/-0.030	41.66	✓		MJP-07	Tape
0.92	+/-0.030	0.918	✓		MJP-04	vern
1.75	+/-0.030	1.750	✓			
0.92	+/-0.030	0.918	✓			
2.125	+/-0.010	2.125	✓			
Ø0.316	+0.006/-0.001	0.317	✓			
Ø0.391	+0.006/-0.001	0.393	✓			
0.28	+/-0.030	0.280	✓			
1.32	+/-0.030	1.320	✓			
7.79	+/-0.030	7.786	✓		31006	Height gauge
5.80	+/-0.030	5.800	✓		MJP-04	vern
2.250	+/-0.010	2.250	✓			
0.875	+/-0.010	0.876	✓			
6.000	+/-0.010	6.000	✓			
7.75	+/-0.030	7.750	✓			
1.125	+/-0.010	1.125	✓			
9.29	+/-0.030	9.290	✓			
1.75	+/-0.030	1.750	✓			
1.38	+/-0.030	1.375	✓			
1.50	+/-0.030	1.499	✓			
0.63	+/-0.030	0.624	✓			
1.00	+/-0.030	1.023	✓			
10.79	+/-0.030	10.790	✓			
3.00	+/-0.030	3.005	✓			
2.00	+/-0.030	2.004	✓			
0.25	+/-0.030	0.262	✓			
0.530	+/-0.010	0.522	✓			
0.35	+/-0.030	0.350	✓			
0.35	+/-0.030	0.350	✓			
R0.13	+/-0.030	0.130	✓			

Measured by: <i>[Signature]</i>	Audited by: <i>[Signature]</i> DAS	Preliminary Approval:
Date: 16/04/26	Date: 16/04/28 UB	Date:

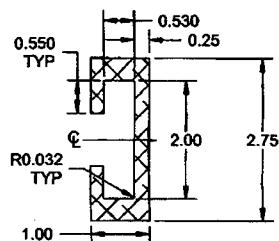
Rev	Date	Change	Revised by	Approved
A	10.06.08	New Issue	KJ	
B	10.10.07	Dimensions updated per Dwg Rev C	KJ	
C	11.06.21	Dwg Rev updated	KJ	<i>[Signature]</i>



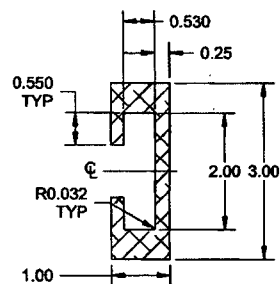


NOTES:

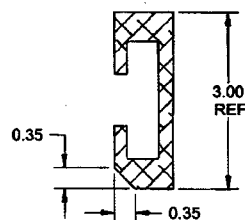
- 1) MATERIAL: 6061-T6 (OR 6061-T62) ALUMINUM SHEET, 1.000 THICK
PER QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027 OR ASTM B209
REF DART SPEC M6061T6S1.000
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 9.12 lbs
- 8) MACHINE PER DART SOLIDWORKS PART "D4037-3_REVD.SLDPRT"



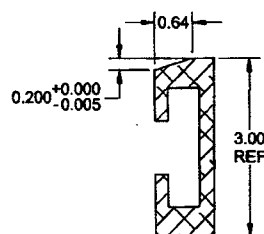
SECTION A-A B6-1
SCALE 2X



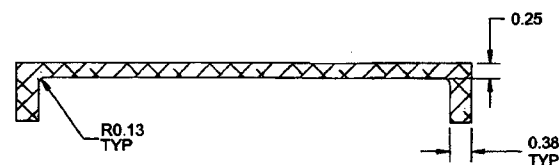
SECTION C-C B6-2
SCALE 2X



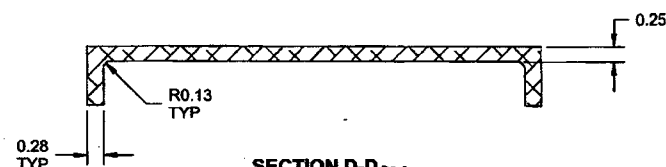
SECTION E-E C5-2
SCALE 2X



SECTION F-F B5-2
SCALE 2X



SECTION B-B B2-1
SCALE 2X



SECTION D-D B3-2
SCALE 2X

RELEASED
2011-04-31
JW

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D4037	REV. D
MFG. APPR.			SHEET 3 OF 3
APPROVED		TITLE	SCALE
DE APPR.		CROSSBEAM	NTS
DATE	11.04.11	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	